

FIG. 2

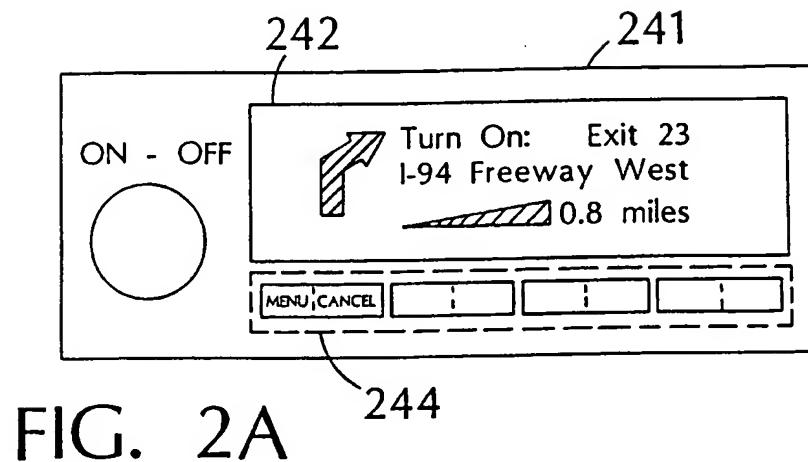


FIG. 2A

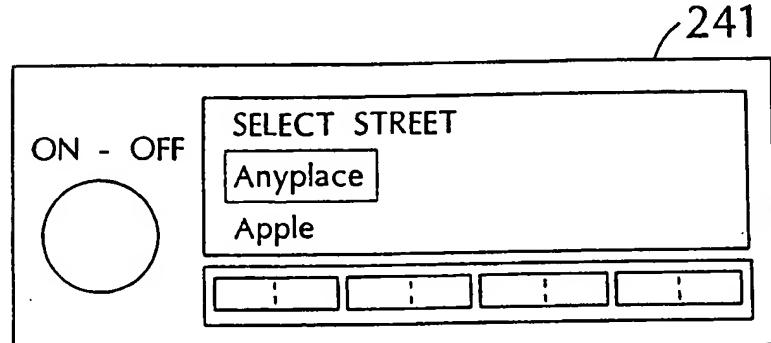


FIG. 2B

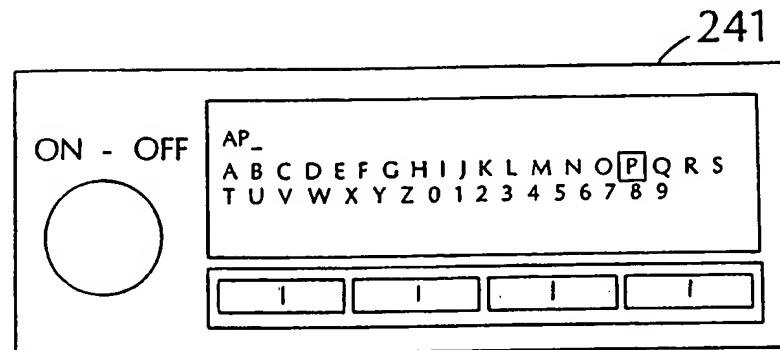


FIG. 2C

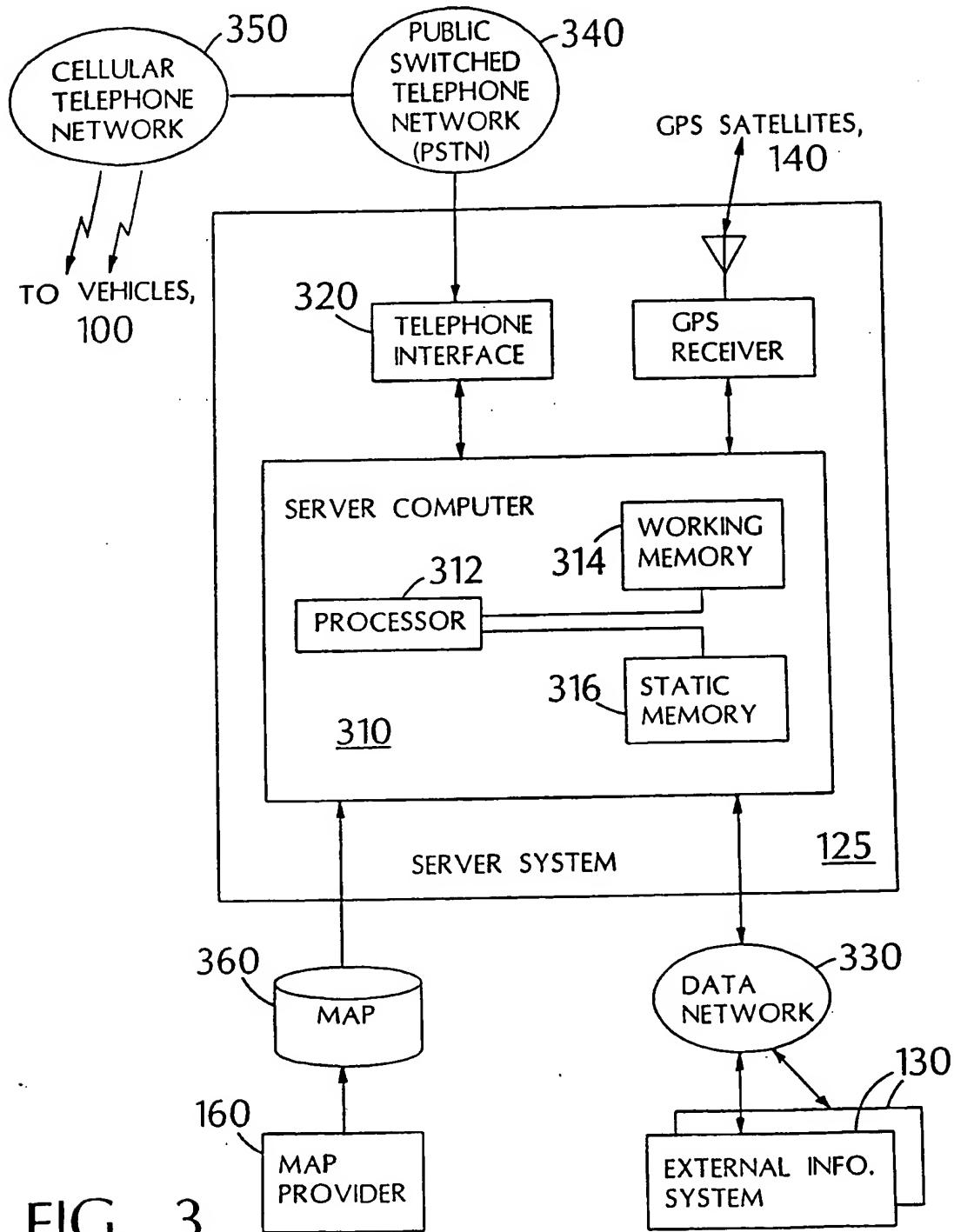


FIG. 3

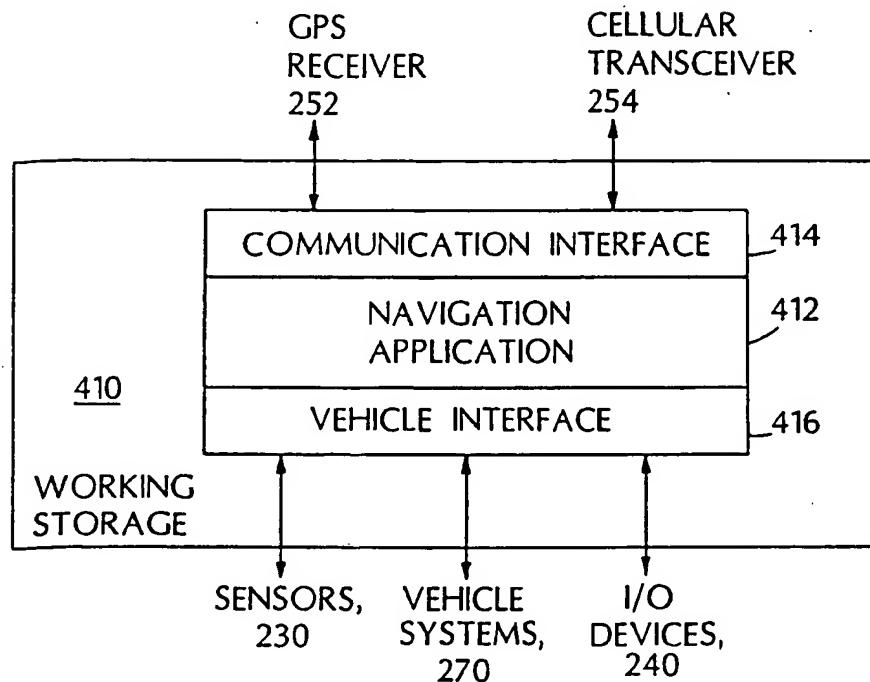


FIG. 4A

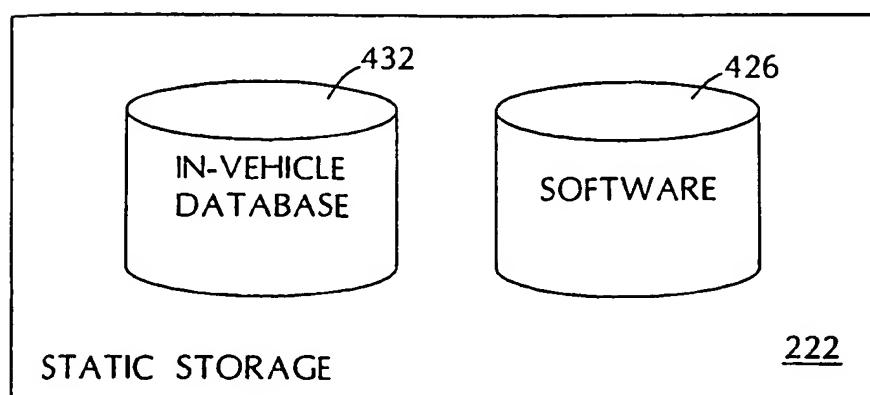


FIG. 4B

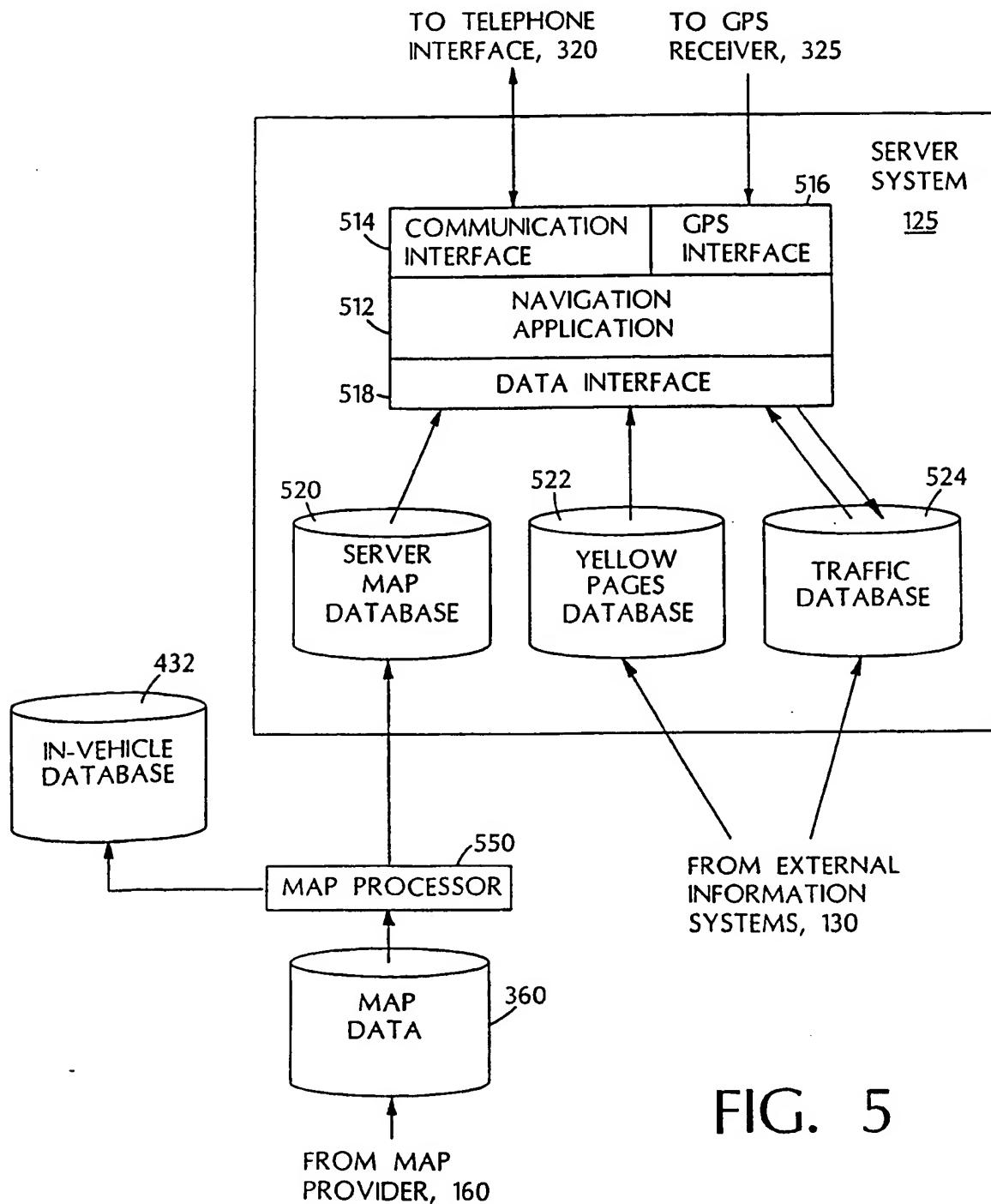
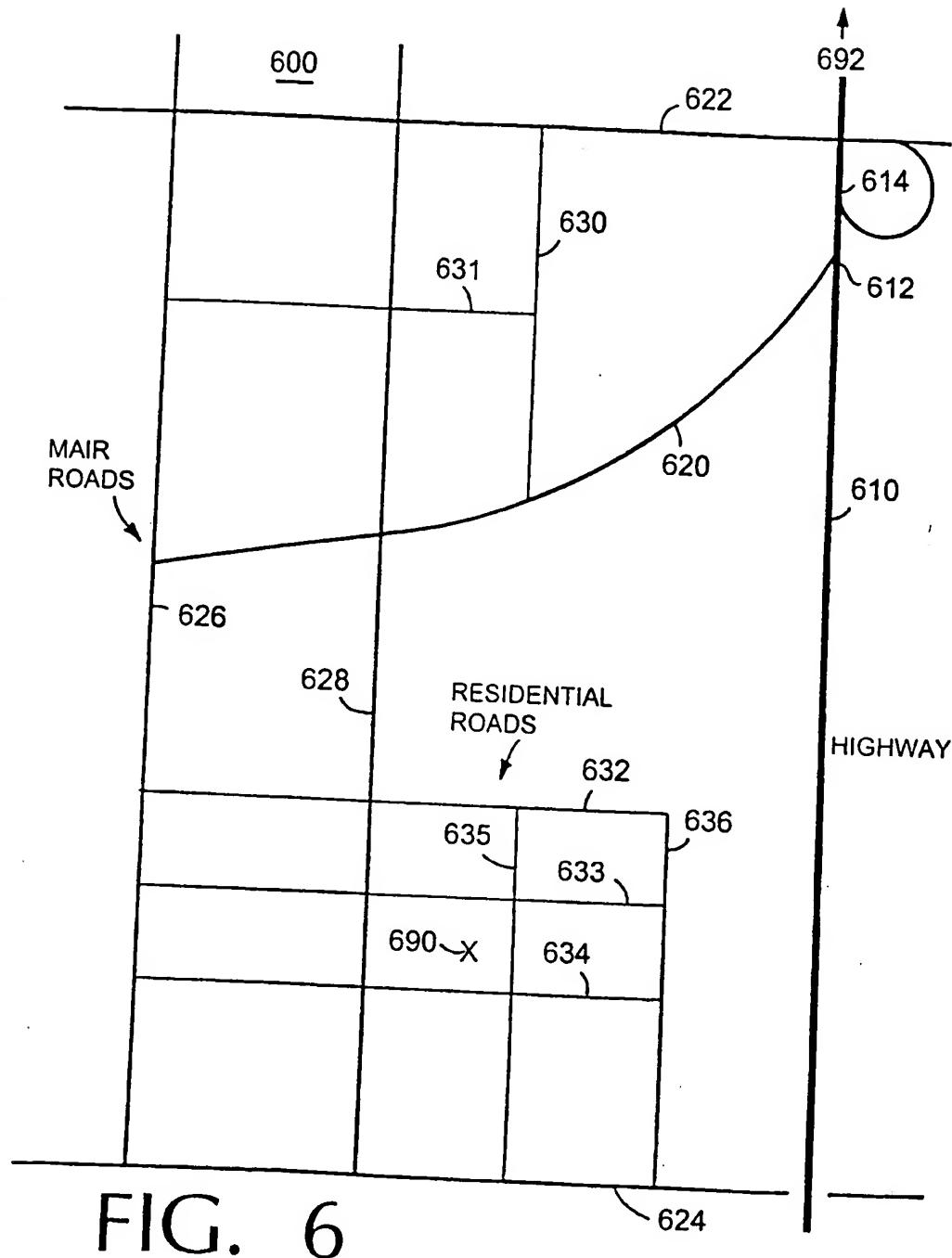


FIG. 5



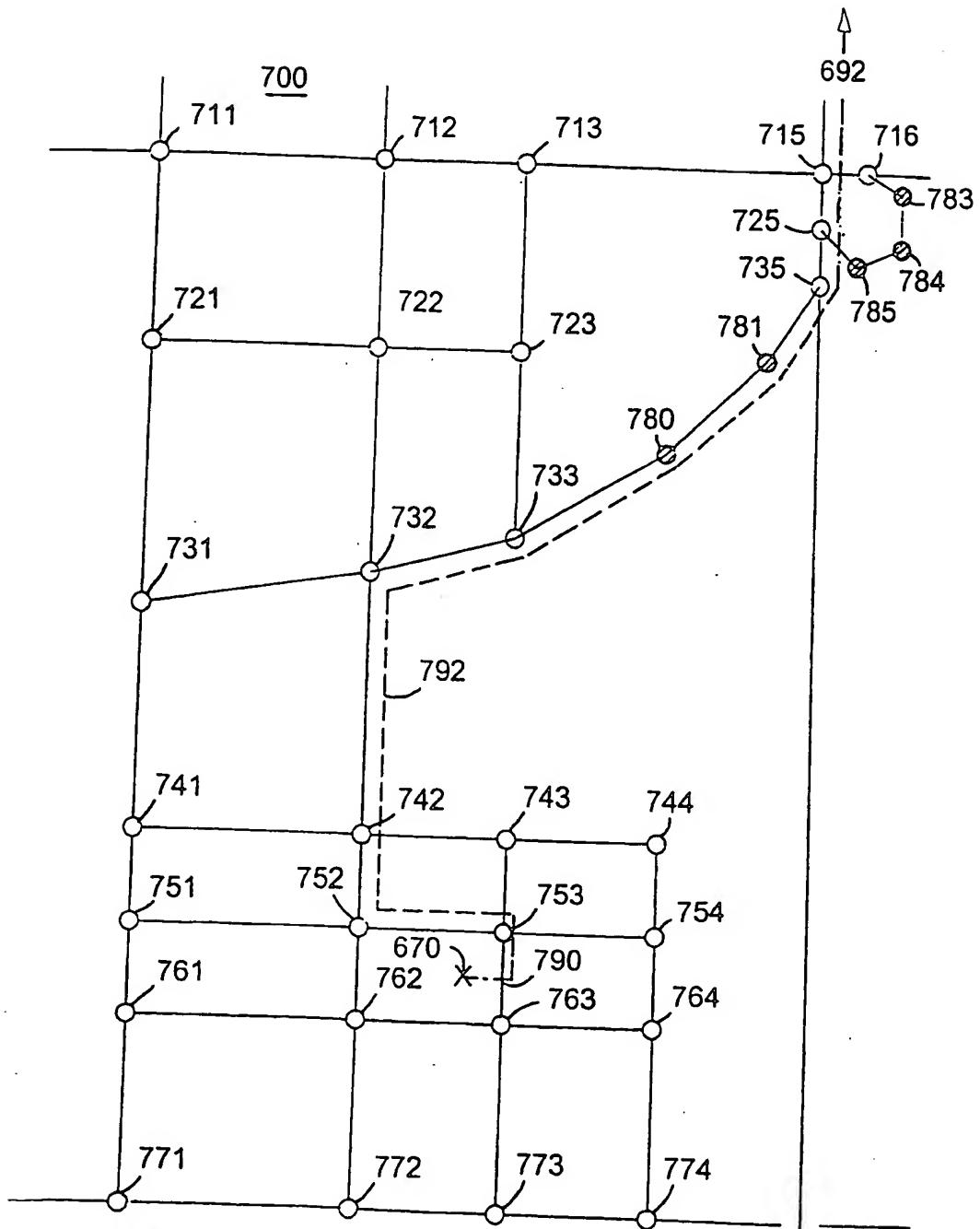


FIG. 7

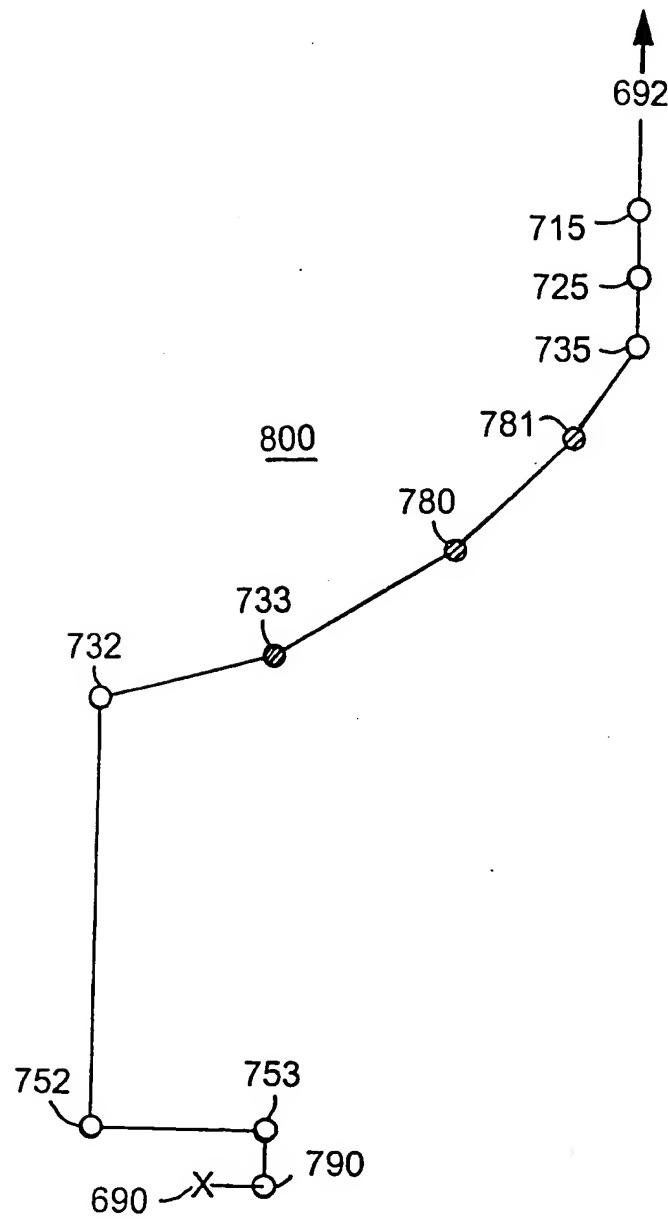
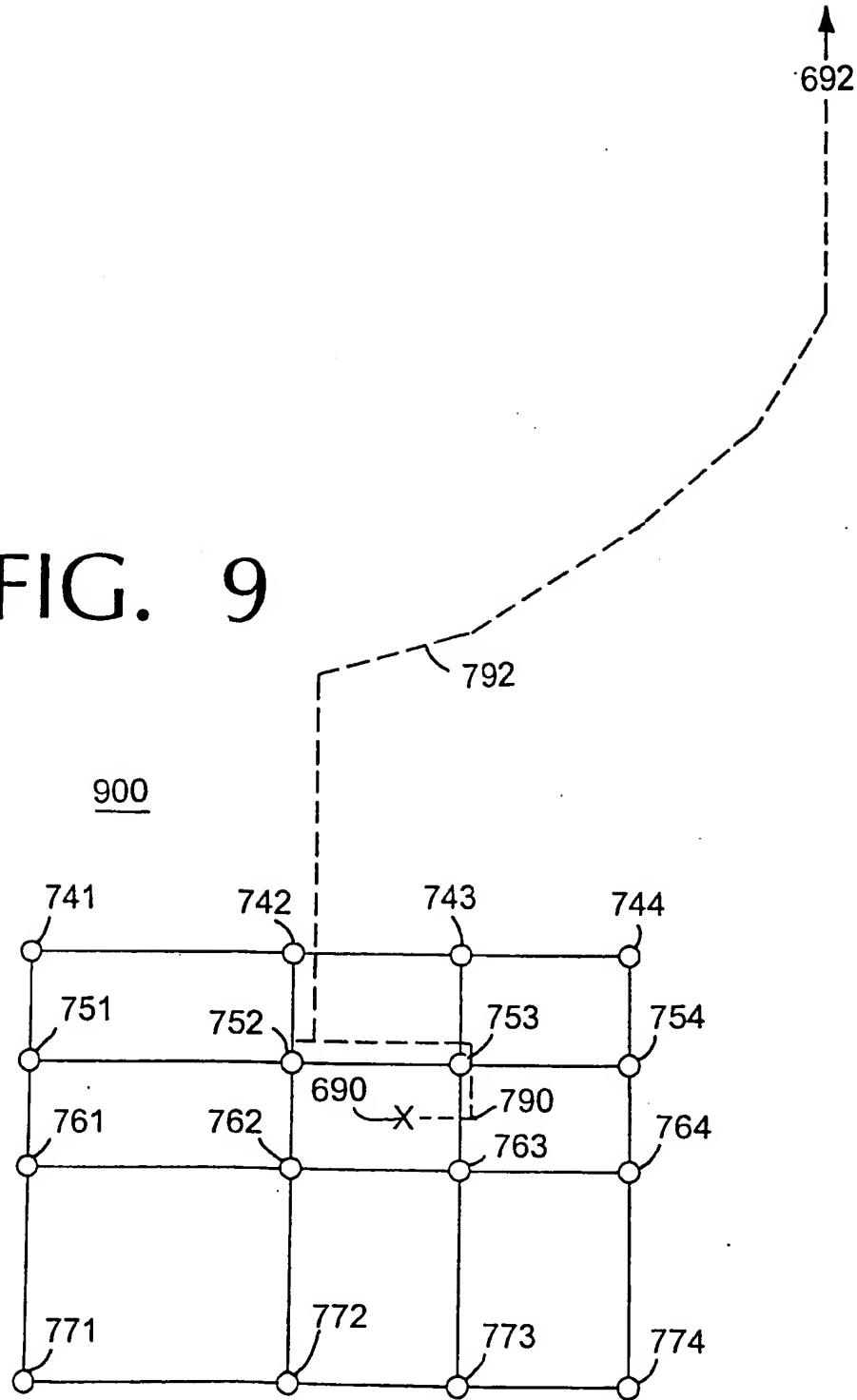


FIG. 8

FIG. 9



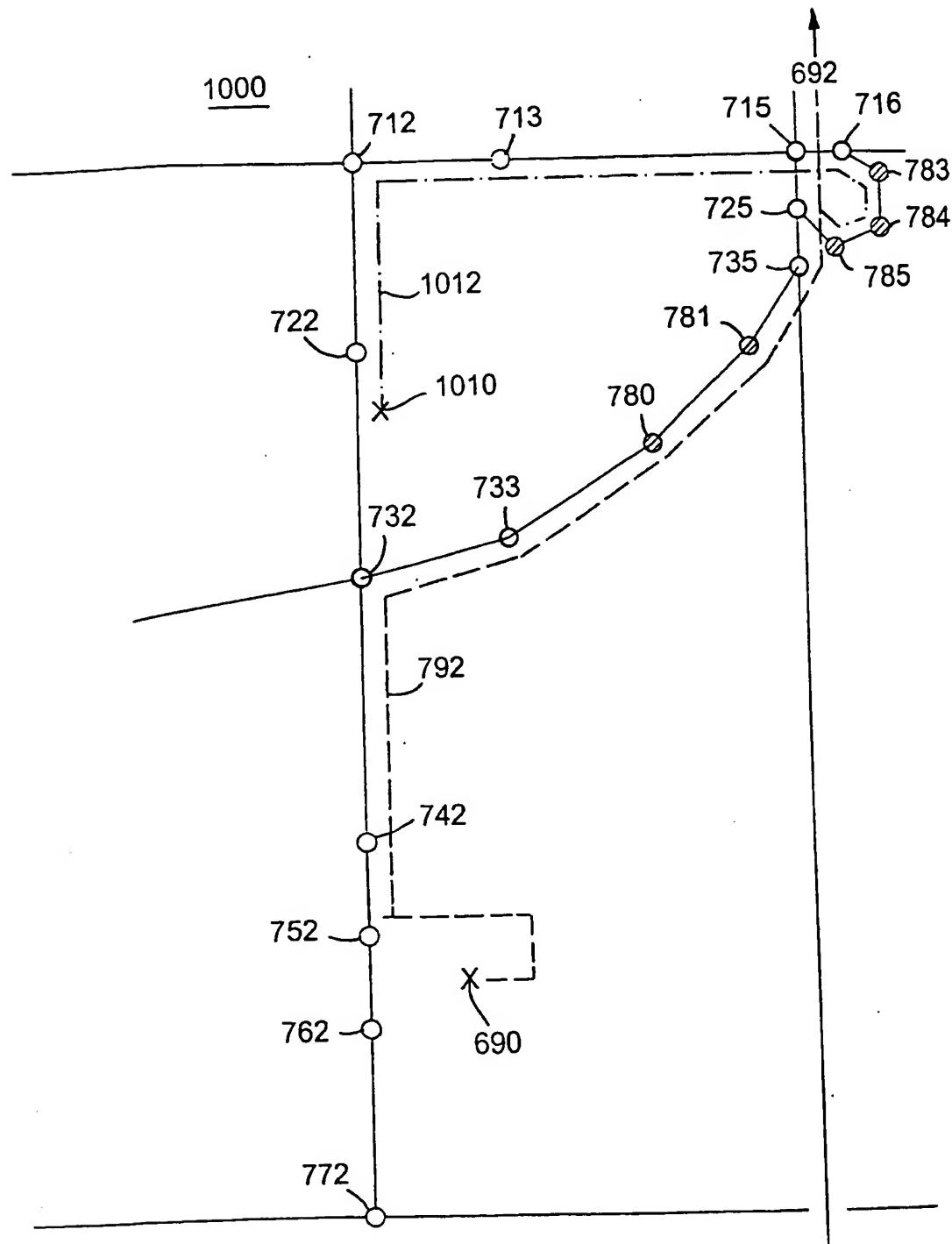


FIG. 10

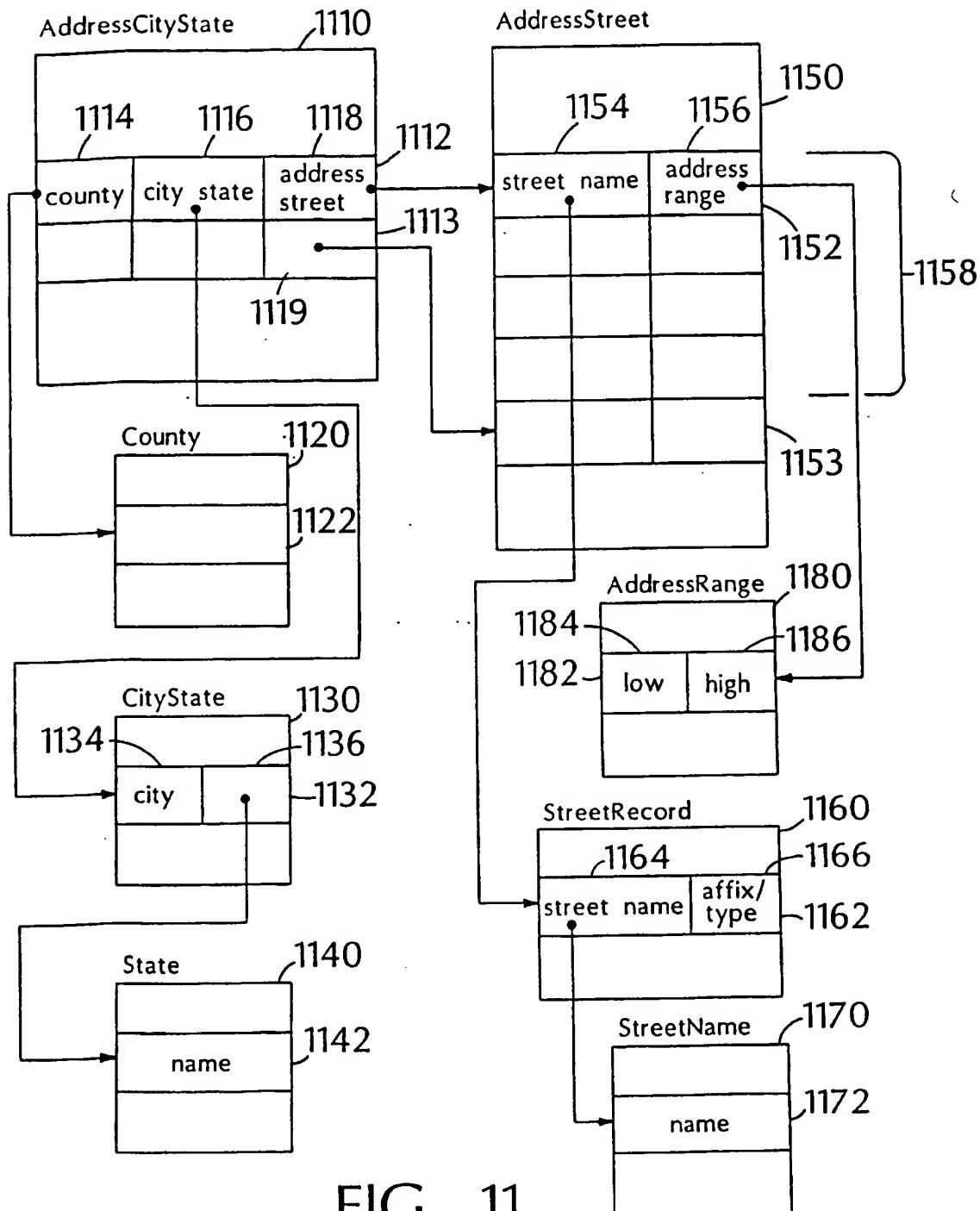


FIG. 11

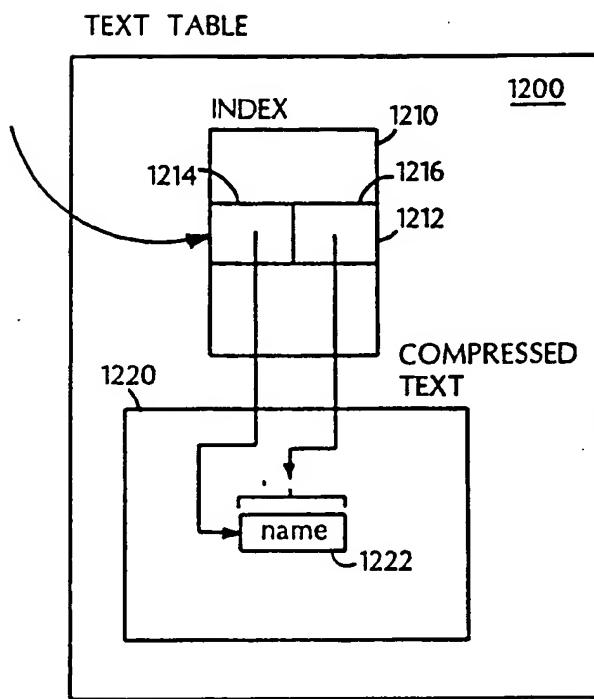


FIG. 12

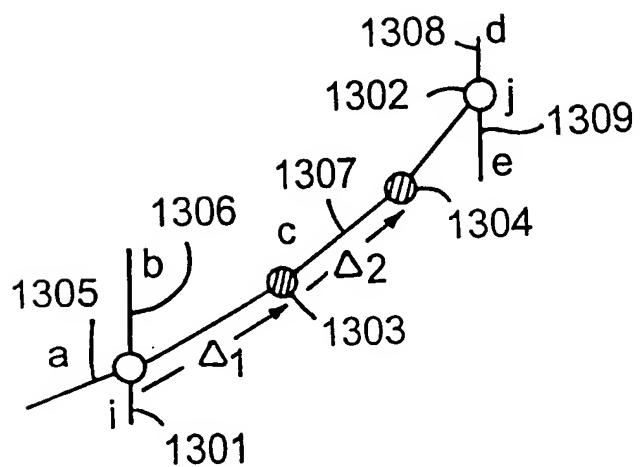
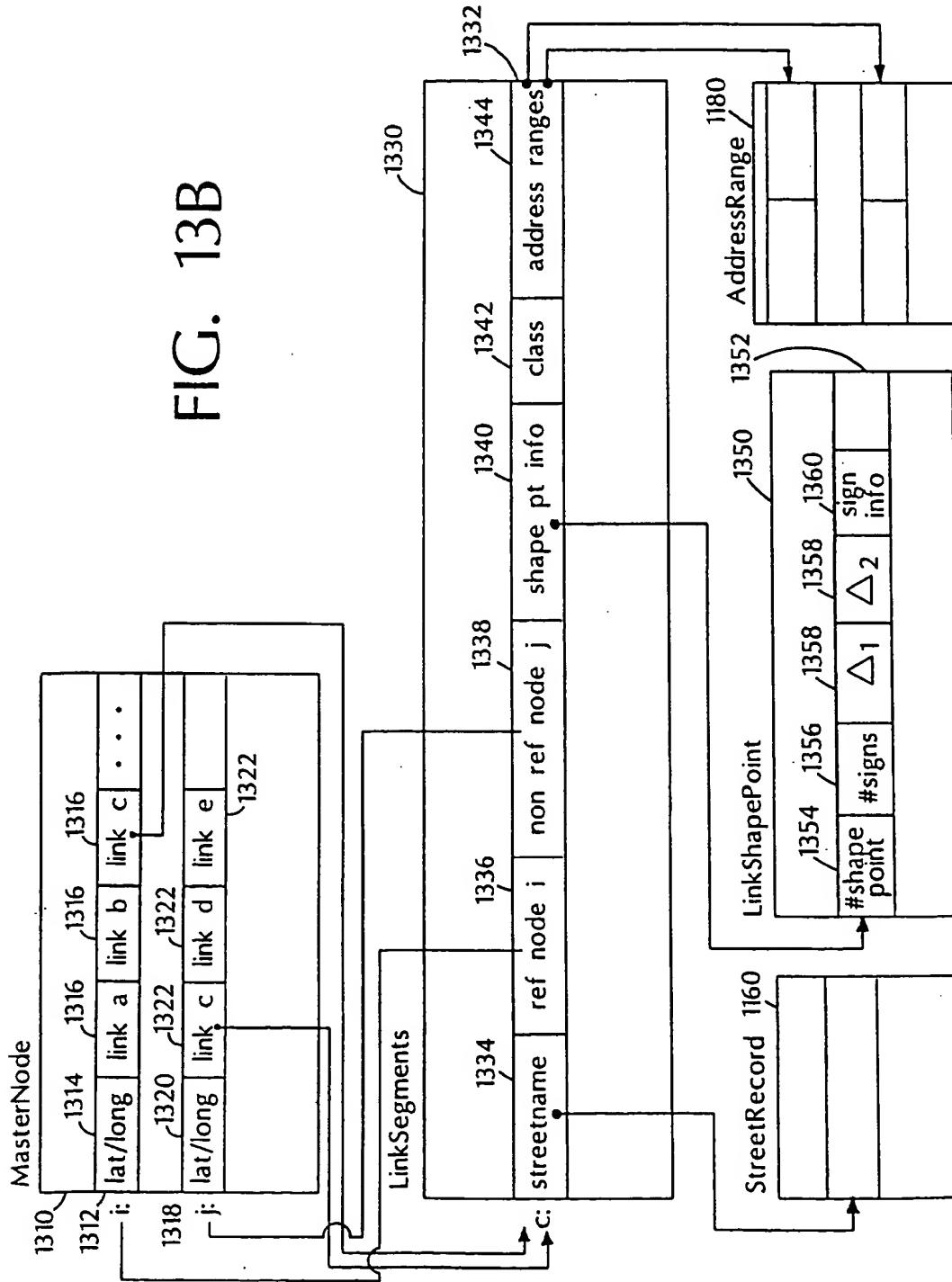
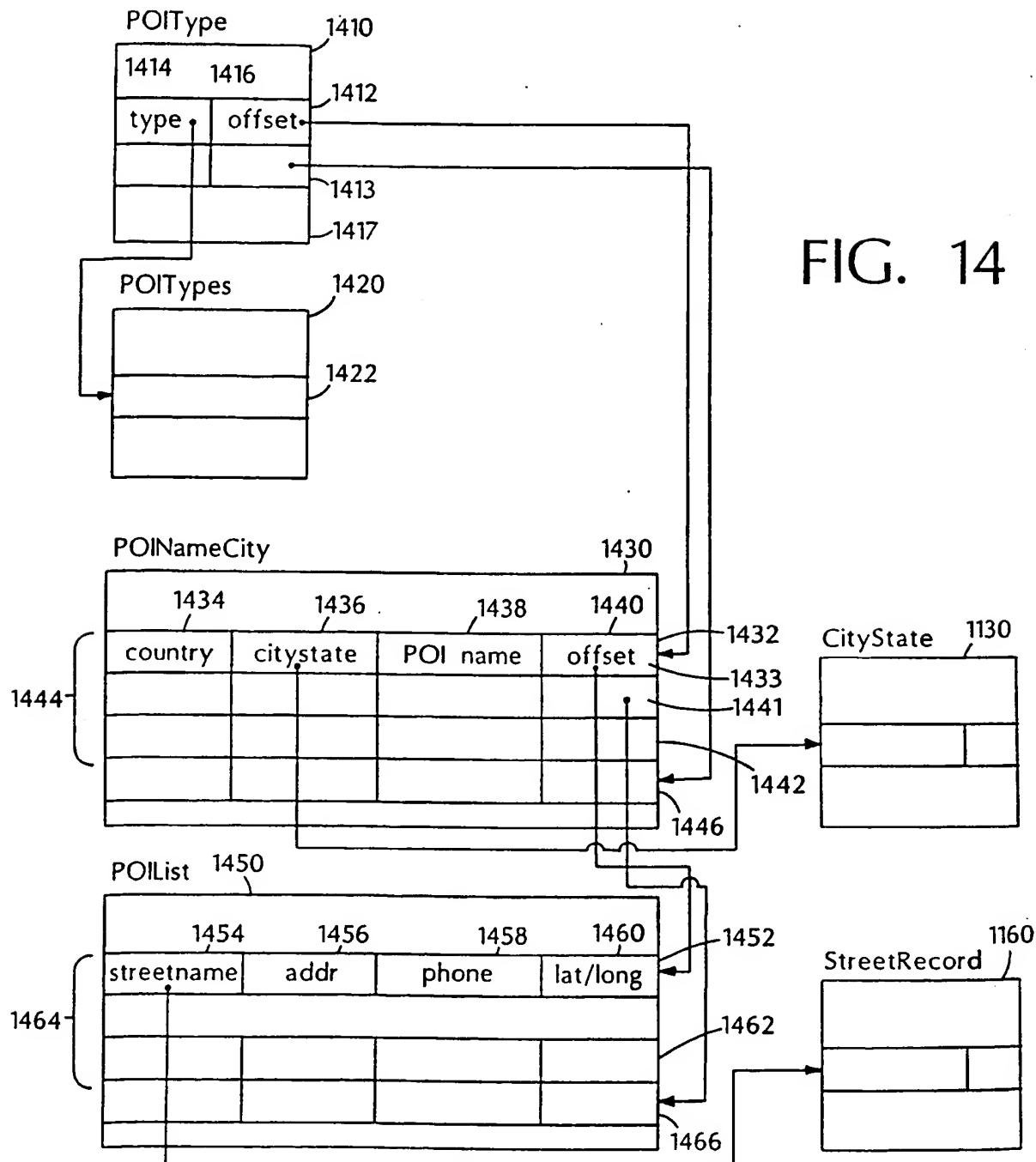


FIG. 13A

FIG. 13B





- 1501 **Plan Route (In-Vehicle):**
- 1502 Accept Destination Specification from Operator
- 1503 Determine Current Location Data
- 1504 Establish Communication Session with Server
- 1505 Send Destination Specification and Current Location Data to Server
- 1506 IF Destination Specification Requires Server Interaction THEN
 - 1507 Accept Secondary Destination Specification Data from Server
 - 1508 Accept Secondary Destination Specification from Operator
 - 1509 Send Secondary Destination Specification to Server
- 1510 END IF
- 1511 Wait for Server Response
- 1512 Receive Planned Route, Spot Map, and Differential GPS Data from Server
- 1513 Close Communication Session with Server

FIG. 15A

1551 Plan Route (Server):
1552 Accept Communication Session with Vehicle
1553 Receive Destination Specification and Current Location Data from Vehicle
1554 Determine DGPS Correction Data
1555 Determine Vehicle Location
1556 IF Destination Specification Requires Further Operator Input THEN
1557 Determine Secondary Destination Specification Data
1558 Send Secondary Destination Specification Data to Vehicle
1559 Receive Secondary Destination Specification from Vehicle
1560 END IF
1561 Determine Planned Route to Specified Destination
1562 Determine Spot Map near Vehicle Location
1563 Send Planned Route, Spot Map, and DGPS Data to Vehicle
1564 Close Communication Session with Vehicle

FIG. 15B

1601 **Startup Maneuvers:**
1602 Initialize Estimated Location using Differential GPS Data
1603 WHILE Estimated Location is not at a Point of the Planned Route DO
1604 Track Estimated Location using (D)GPS Data
1605 Display Spot Map and Estimated Location on Display
1606 END WHILE

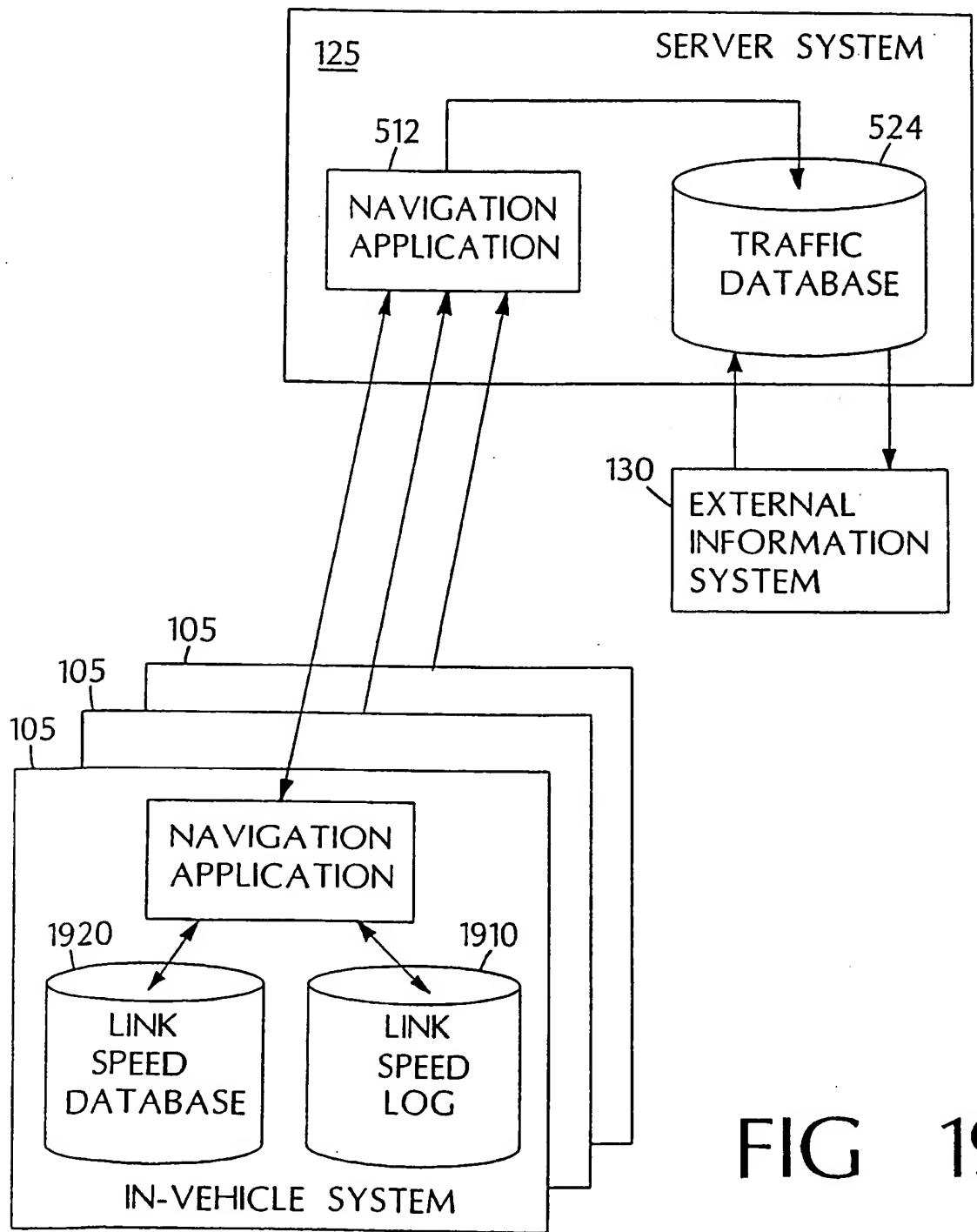
FIG. 16

1801 **Replan Route:**
1802 Estimate Vehicle Location of Main Roads Network using
1803 Dead-Reconing Location
1804 Calculate Best Route to a Maneuver or Way Point on the Previous
1805 Planned Route
1806 Replace Planned Route with Newly Calculated Route
1807 GOTO Follow Route

FIG. 18

1701 **Follow Route:**
1702 FOR Each Link on Planned Route DO
1703 At Initial Maneuver Initialize Off-Route Tolerance
1704 WHILE Vehicle Is Travelling to the Next Maneuver Point DO
1705 Increase Off-Route Tolerance
1706 Track Dead-Reckoning Location
1707 Track (D)GPS Location
1708 IF (Dead-Reckoning Location is more than Off-Route Tolerance
1709 from (D)GPS Location THEN
1710 GOTO Replan Route
1711 END IF
1712 IF Dead-Reckoning Location is within Maneuver
1713 Notification Window THEN
1714 Notify Operator of Next Maneuver
1715 END IF
1716 IF Dead-Reckoning Location is within Maneuver
1717 Detection Window THEN
1718 IF Next Maneuver is Detected THEN
1719 Update Dead-Reckoning Location
1720 Update DGPS Data
1721 END IF
1722 END IF
1723 UNTIL Maneuver was Detected OR
1724 Vehicle Leaves Maneuver Detection Window
1725 UNTIL Destination is Reached

FIG. 17



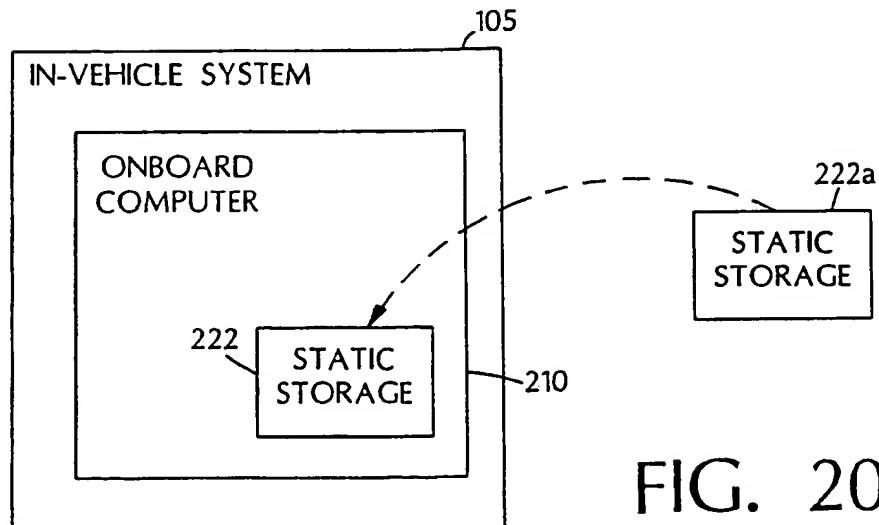


FIG. 20A

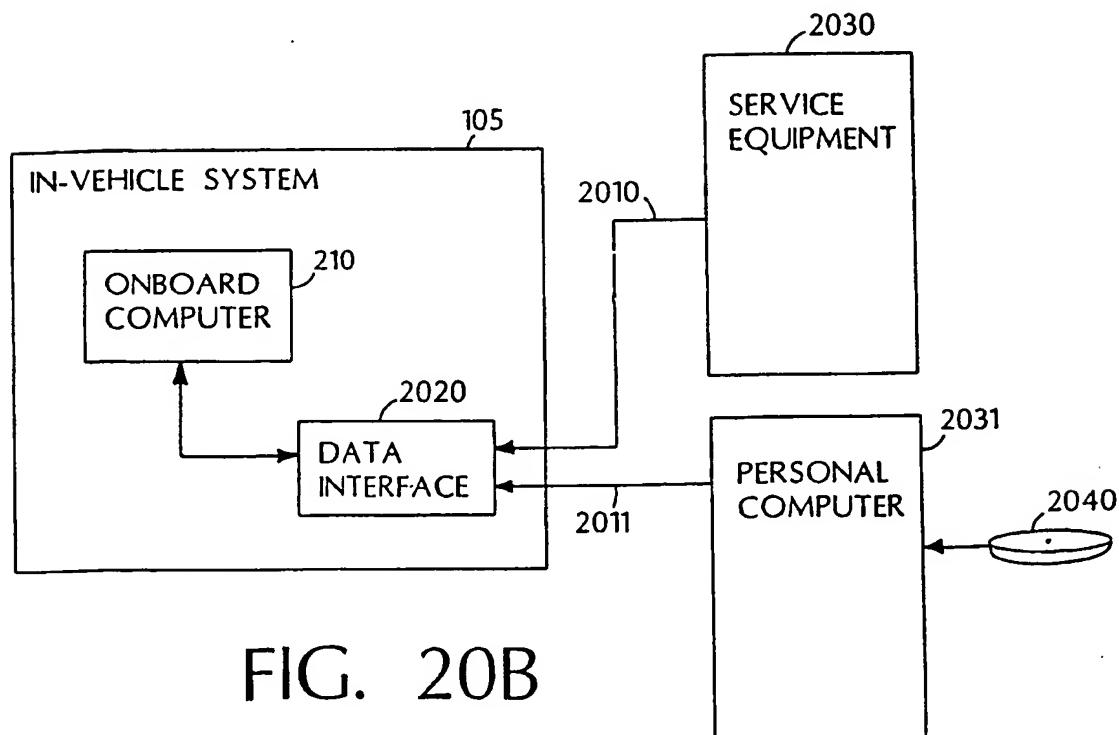


FIG. 20B

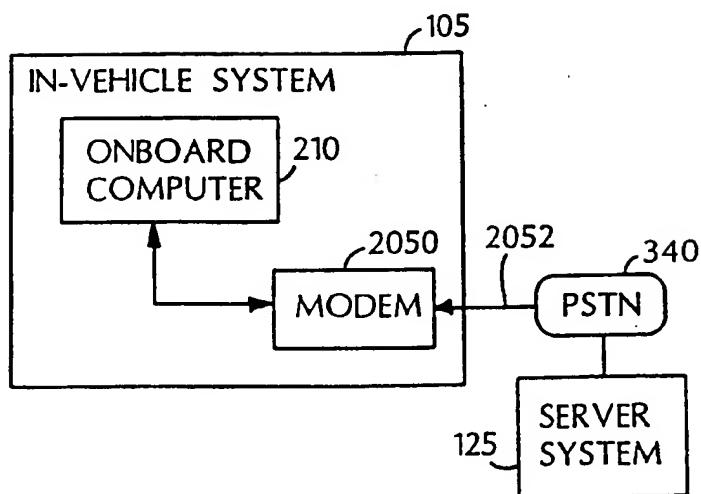


FIG. 20C

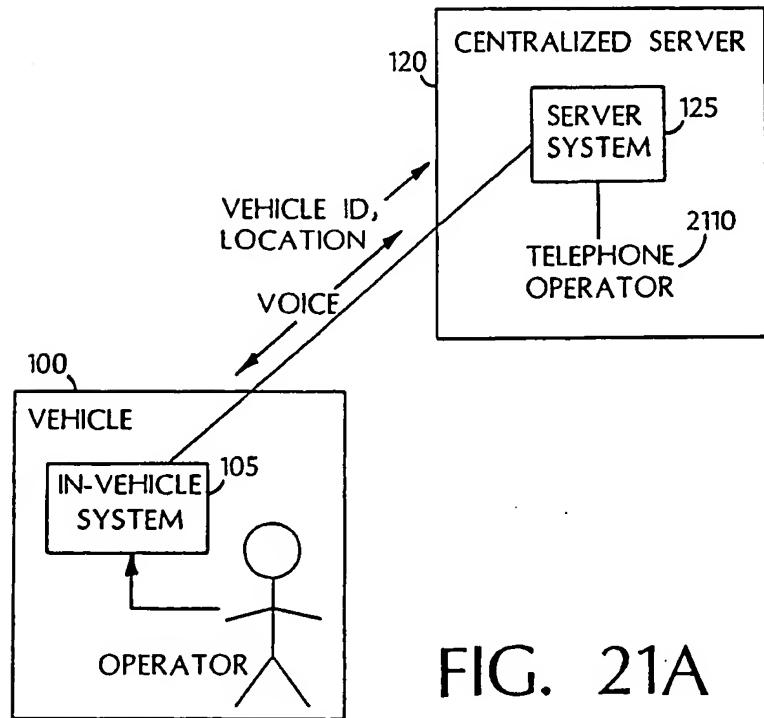


FIG. 21A

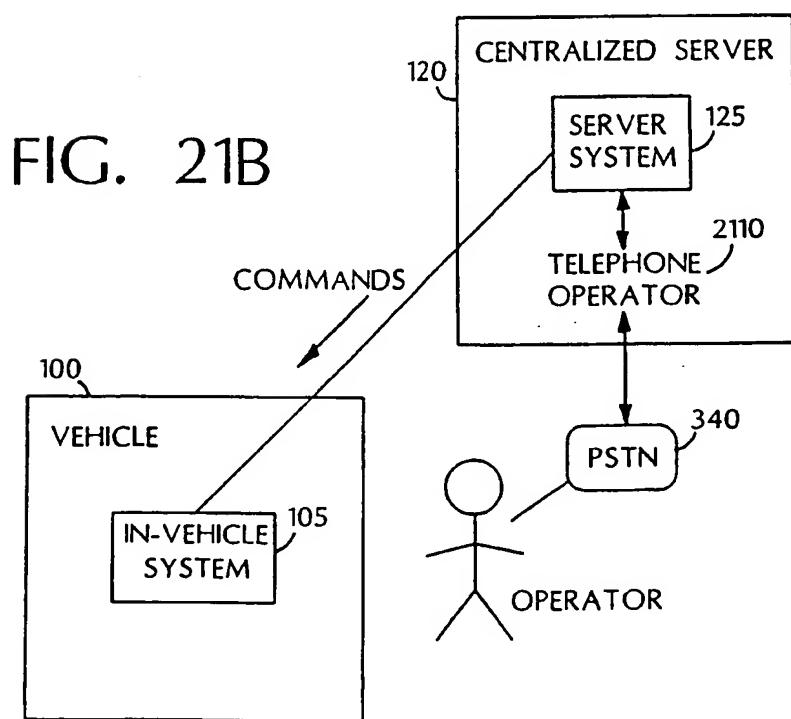


FIG. 21B

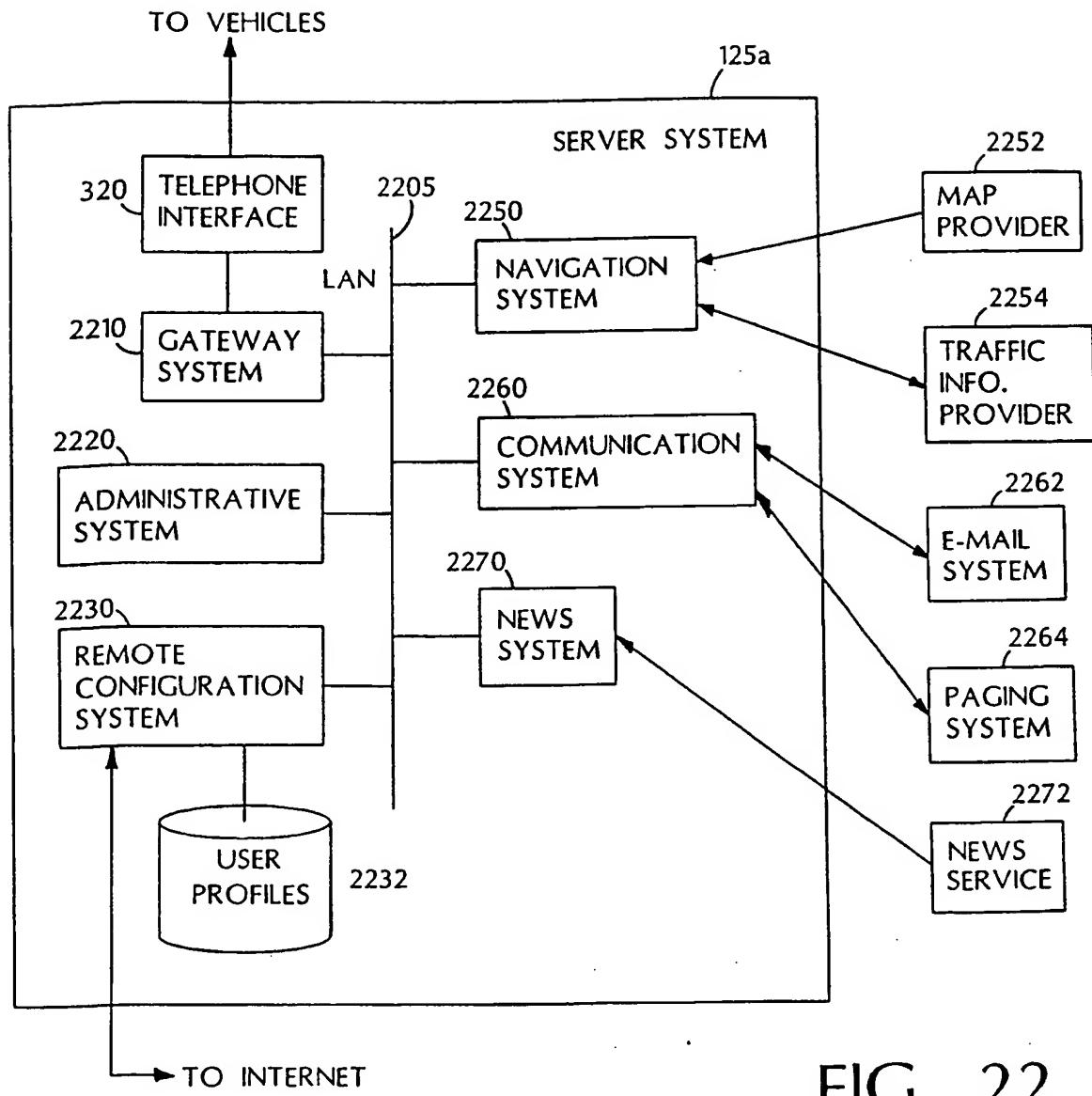


FIG. 22

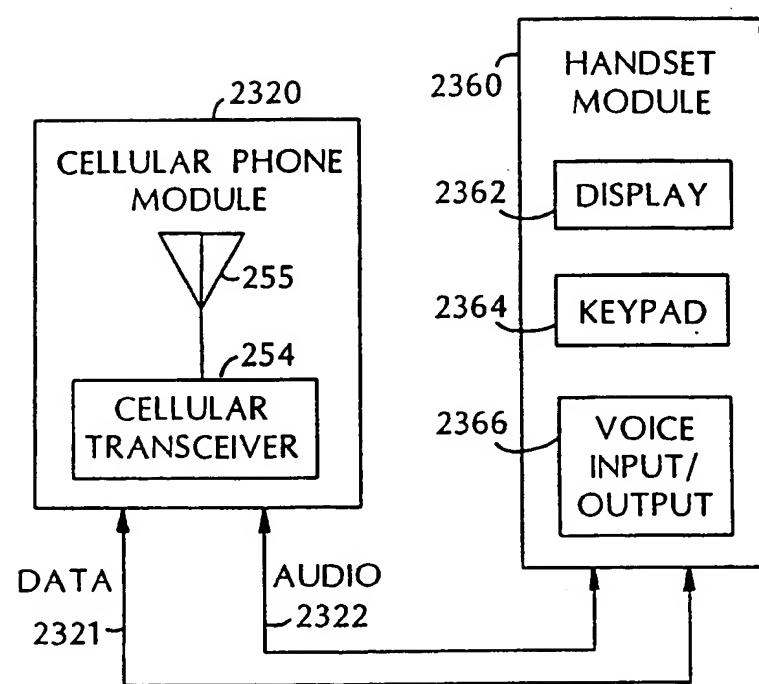


FIG. 23A

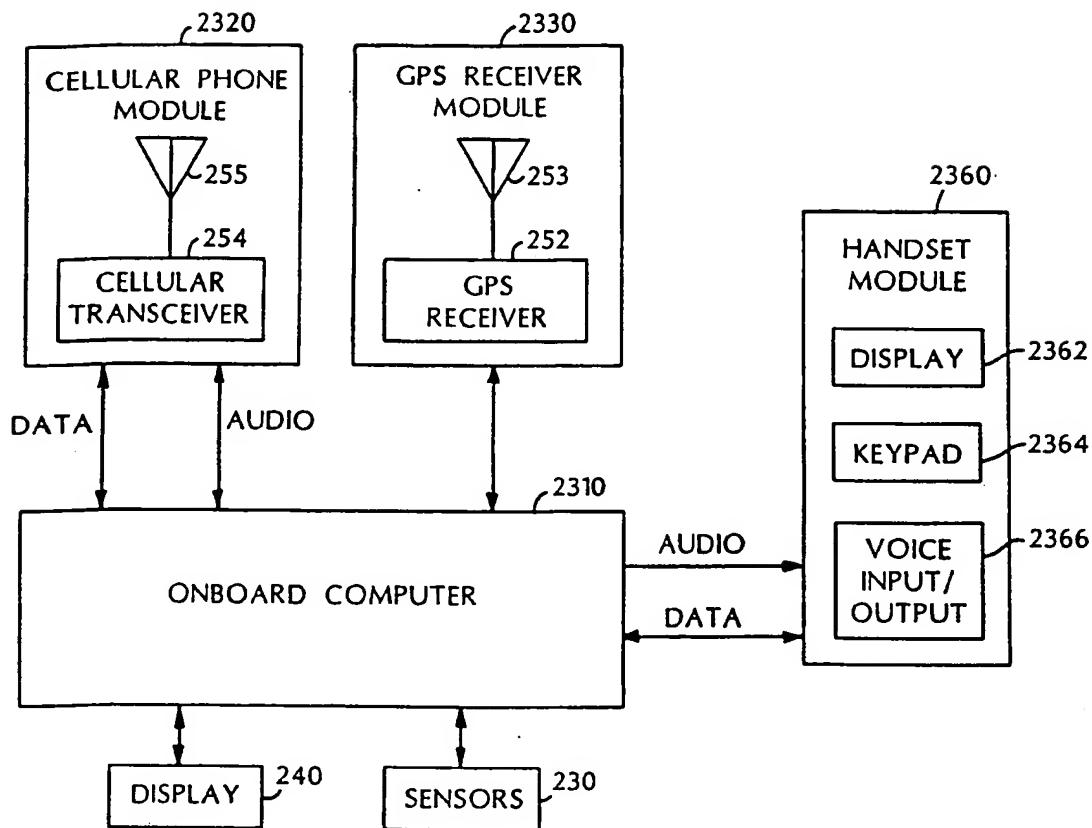


FIG. 23B

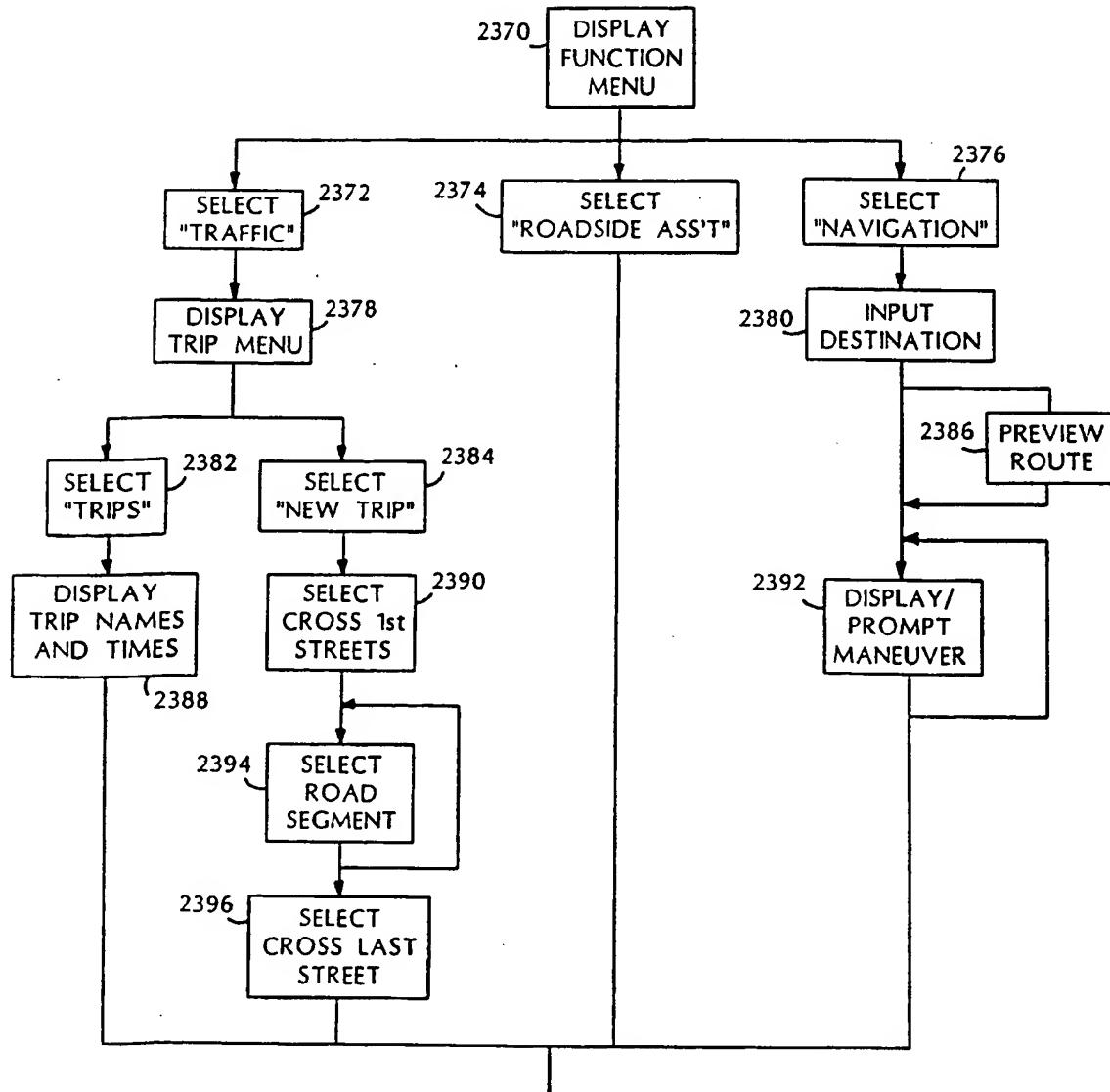


FIG. 23C

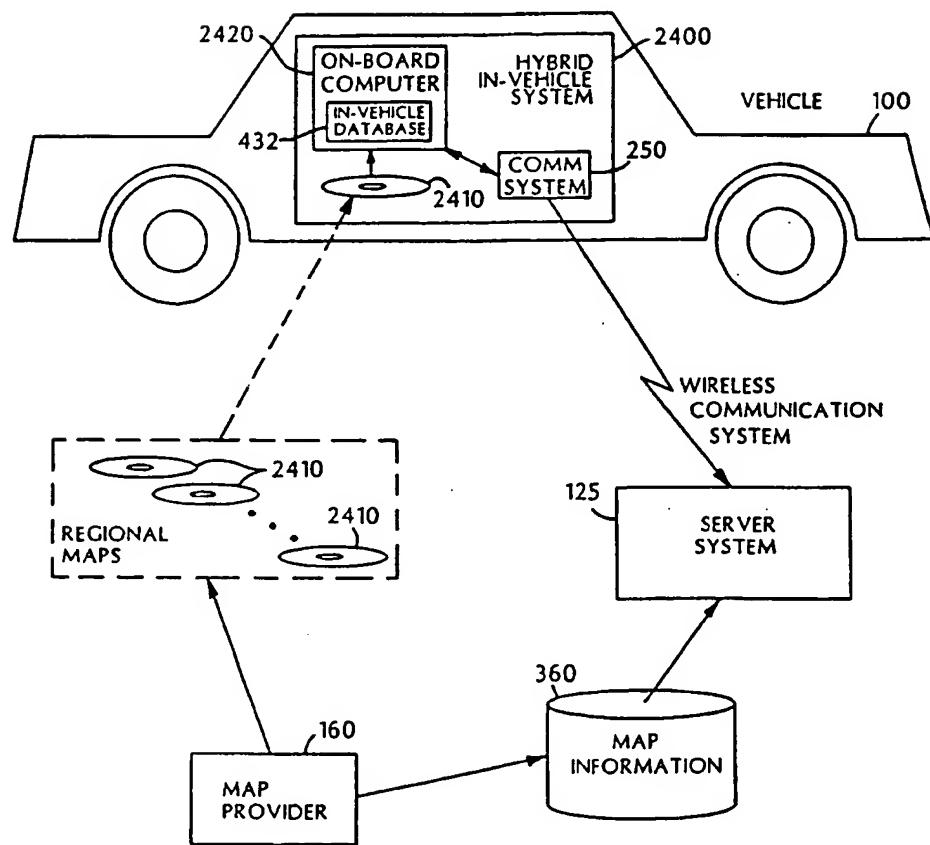
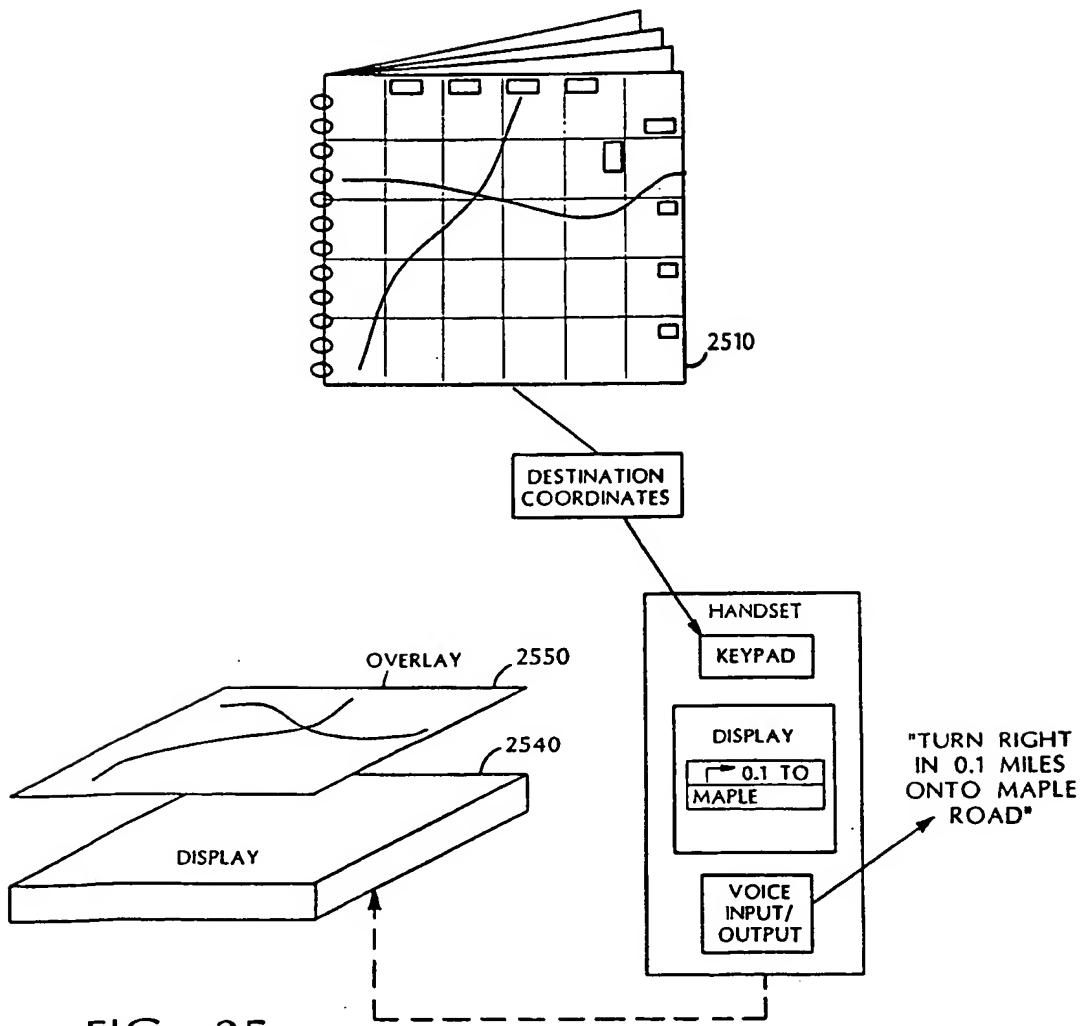


FIG. 24



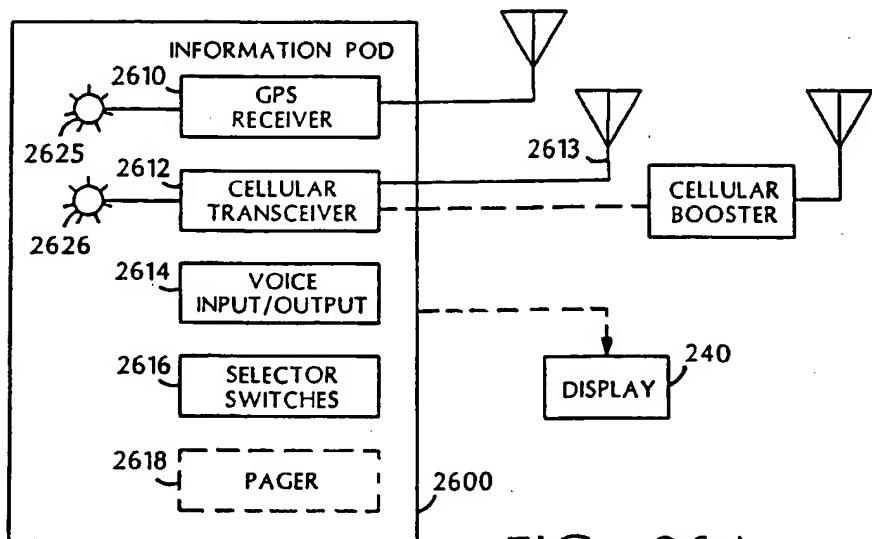


FIG. 26A

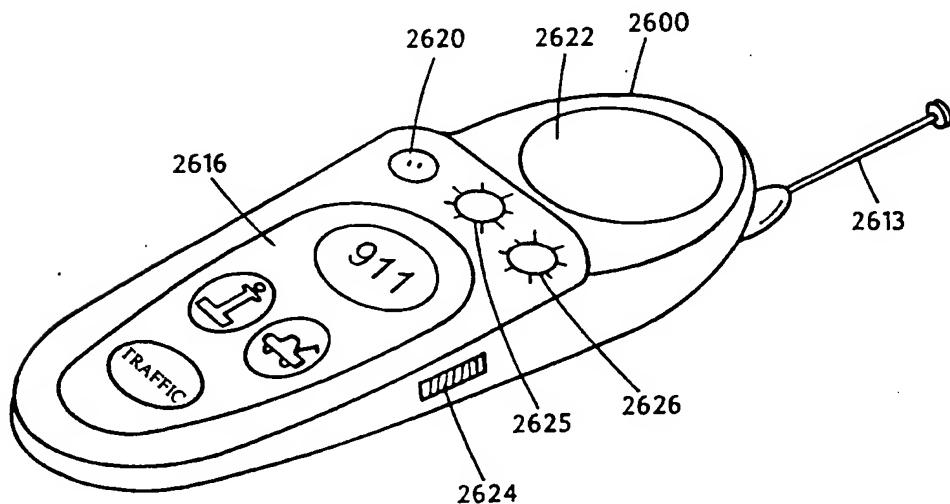


FIG. 26B